



FINAL

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City of Durham, North Carolina 10-Year Comprehensive Solid Waste Management Plan Update



Department of
Solid Waste Management

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Executive Summary

Introduction

This solid waste management plan update for the City of Durham, North Carolina (the City), was prepared in accordance with N.C. General Statute 130A-309.09A(b) for the purpose of meeting local solid waste needs and protecting public health and the environment. The plan provides for the mandatory three-year update to keep the ten-year plan current and to reevaluate existing solid waste practices. This update was originally due in June 2009. However, due to the many changes occurring at the Solid Waste Department, the City asked for and received an extension. This will be the fourth update to the plan that was originally adopted in 1997.

This planning document includes all solid waste activities that happen within Durham and not just the residential solid waste that is collected by the City. Municipalities are required to develop solid waste management plans that:

- Define goals and objectives.
- Identify local needs to meet these objectives.
- Provide an inventory and assessment of current systems.
- Evaluate different disposal and recycling options, and recommend actions.

This plan is founded on six basic assumptions:

- *Assumption 1* - Progress in solid waste management is one of many goals of the City of Durham. The solid waste management plan should complement other goals of the community whenever possible.
- *Assumption 2* - Every sector of the community must work collaboratively in order for solid waste goals to be achieved. Government may take a leadership role, but is not always the best or most cost-efficient service provider for all solid waste activities.
- *Assumption 3* - No perfect solutions exist in the field of solid waste. All strategies have pros and cons. A combination of solutions that incorporate flexibility and fairness is essential in light of significant changes in technology, consumer/business behavior, and legislation.
- *Assumption 4* - Solid waste policies and programs should be based upon the best information available. As much as possible, decisions will reflect the unique characteristics of the City of Durham.
- *Assumption 5* - Solid waste strategies should be integrated with each other and build upon existing customs, institutions, and systems.

- Assumption 6 - Although this plan relates specifically to the City of Durham, some goals and intended strategies will affect Durham County and the entire Triangle Region. City staff has interacted with Durham County staff assigned to update the County's Plan to ensure that issues affecting both governments have been addressed.

Solid waste management strategies will continue to change as the industry changes. Durham has made, and will continue to make, difficult decisions in response to changing conditions. Having an overall sense of direction that the community is willing to support will make decisions easier and more effective. This Update is designed to assist Durham in taking a careful look at its solid waste management processes and initiatives and develop consensus about goals and objectives for solid waste management over the next ten years.

Planning Area Goals

The City of Durham's long-term goal is to help reduce waste generated within the City and surrounding areas. The City and its partners will strive to educate the entire community about solid waste and recycling, and to make solid waste disposal and recycling easy and accessible to everyone. The realization of these efforts will prevent improper waste disposal and provide greater protection for the public health and for the environment. Our goals are summarized as follows:

- *Goal 1* – Develop a Solid Waste Management Plan that is in conformance with state requirements and with local objectives.
- *Goal 2* – Identify any deficiencies in existing solid waste management programs and systems that must be addressed in order to meet local needs and provide protection for the public health and for the environment.
- *Goal 3* – Develop local reduction goals and programs for City programs as well as the entire City.
- *Goal 4* – Develop and implement a comprehensive, ongoing public education program and encourage public participation in the long-term planning process.

Waste Quantities and Composition

The City of Durham transfer station managed approximately 170,300 tons of solid waste in Fiscal Year 2008-2009, of which, about 35% was collected by City staff from curbside locations. Of the waste brought to the transfer station, it is estimated that 35% is residential, 56% is commercial waste, and 5% is industrial waste. This is not the waste stream for all of Durham. Statewide estimates from NCDENR indicate that the typical statewide waste stream is 28% residential, 23% commercial, 29% C&D and 20% industrial. Urban areas, such as Durham are expected to have a much higher concentration of commercial and C&D waste, but exact figures are not available.

Waste Reduction Goals

As required by state law, we will establish a county wide waste reduction goal that uses the formula and data provided by the North Carolina Department of Environment and Natural Resources Division of Pollution Prevention and Environmental Assistance (DPPEA). The goal for fiscal year 2009-2010 that was

established in the previous plan was 15%. The City is not on track to meet that goal, and it does not seem likely that goal is achievable with our current waste reduction programs. Our actual results for fiscal year 2008-2009 were about an 8% waste reduction. Our new waste reduction goal is 10% for FY 2012-2013 and 15% for FY 2019-2020.

Due to funding issues, and the availability of adequate private sector competition, all our current waste reduction programs are aimed at the residential sector. Our residential program is doing quite well and diverts about 20% of our curbside waste to recycling. However, we have no similar programs aimed at the commercial sector. Since residential collections represent less than half of our waste stream, even great improvements in residential recycling will not yield a significant influence in the overall waste activities for all of Durham.

Assessment of Programs and Services

Through the following efforts, the City and its partners will make progress towards meeting the goals established within this Solid Waste Management Plan Update.

Waste Reduction – The City will continue to develop policies and programs that will foster waste reduction methods including source reduction, recycling, reuse, composting, and special waste programs. At the present time, these programs are primarily aimed at the residential sector and are not having minimal impact on waste generation in the commercial, industrial, or building sector. Due to the current economic situation, no new programs aimed at the other waste sectors are likely in the next three years. Below is a summary of what could potentially be included in a waste reduction program:

- *Source reduction* is any action that avoids creation of waste by reducing volume or toxicity of waste at the source, including redesigning products or packaging to increase durability or reusability of materials or otherwise preventing material from entering the waste stream.
- *Recycling* is the recovery from the waste stream of materials that can be converted into raw materials for the manufacture of new products.
- *Reuse* is further or repeated use.
- *Composting* is a method of biologically decomposing organic matter in an environment conducive to the growth of microorganisms under aerobic conditions.
- *Special waste* includes HHW disposal programs, tire recycling, used motor oil/antifreeze recycling, etc.

Collection - The City's Department of Solid Waste Management collects residential garbage from approximately 67,000 curbside locations with semi and fully automated trucks. It also collects yard waste on a weekly basis from approximately 17,000 residents who subscribe to the service. The City has no involvement in collection activities for the majority of the waste sector which includes commercial and industrial locations.

In July of 2009, the City ceased its “stationary container” (Dumpster) service that is the primary method of commercial garbage collection for commercial establishments that generate more than three 95 gallon roll-out carts of waste per week, and began bi-weekly curbside recycling collection using 95 gallon roll-out carts in lieu of 18 gallon bins. In 2008, bulk collection switched from scheduled call-in service to once per month automatic collection. In July 2009, bulk item collection switched to weekly service.

Recycling and Reuse - As a result of a very successful pilot single stream recycling collection program conducted from October 2008 – July 2009, the City expanded this service citywide. The typical 18-gallon recycling bins were replaced with 95-gallon rollout carts. In the pilot program, all neighborhoods showed an increase in the amount of recyclable materials collected which ranged from 12% to more than 100%. There was also an increase in the household participation rate from 50% to 70%. The anticipation is that the same success will be realized in the citywide deployment. Also, all of the un-staffed recycling drop-off centers were closed. Considerable staff time was spent in maintaining these sites that frequently became illegal dumping grounds.

The City oversees operation of the Waste Disposal and Recycling Center (Transfer Station) at 2115 E. Club Boulevard. This facility provides recycling of all of the items that are accepted curbside and several other special wastes.

The City operates a Swap Shop at the Waste Disposal and Recycling Center. This encourages waste reduction through the practice of reuse. Residents having items in good working, useable condition can donate them to the Swap Shop directly. Also, staff at the Household Hazardous Waste (HHW) Facility will examine items brought there and transport any reusable items to the Swap Shop. Residents in need of items can visit the Swap Shop to look for items free of charge.

Recycling is promoted in other ways by making recycling collection available at City festivals such as Bimbé, CenterFest, Durham Blues Festival, and Earth Day Celebrations. We currently provide recycling collection in six parks. While funding issues have prevented the expansion of recycling into all the parks, planning is underway to significantly expand parks recycling due to the implementation of single-stream recycling. The City’s internal recycling program encourages recycling by making it easy and readily accessible. **Disposal Bans**

Since the last plan update, NC General Statute § 130A-309.10 has been revised, banning the disposal of additional recyclables from the state’s landfills and incinerators. The specific banned items are, in effective date order, oyster shells, motor oil filters, recyclable rigid plastic bottles, wooden pallets, computer equipment, and televisions. Section 5.4.1 details what the City is doing to comply with these bans.

Composting and Mulching - the City is not currently operating a yard waste facility; nor does it have a composting and mulching program at this time. The City expects to reopen its yard waste facility in the spring of 2010. Before the yard waste facility closed, the City received and processed nearly 12,000 tons of yard waste annually.

Disposal - The City does not operate a sanitary landfill and does not have any plans to build a landfill in the foreseeable future. In January of 2006, the City closed its LCID landfill. A closure plan submitted to NCDENR was approved. Half of the landfill was capped in November of 2008. We project the second half will be capped by the end of 2009.

The City will continue to transfer its solid waste received at the Transfer Station to an approved Subtitle D sanitary landfill, which is currently Brunswick Waste Management Facility in Lawrenceville, Virginia. This facility is 90 miles from the Transfer Station and is owned by Republic Waste, Inc. This contract expires June 2010. During FY2007-2008, about 182,000 tons were received at the City of Durham facility, which represents about 60% of all the waste that originates in Durham County.

For future plans:

- Incineration is not part of the City's current program. The City has no plans to use incineration with or without energy recovery in the near future but will continue to explore the changing technology.
- The City will explore using North Carolina landfills as part of future contract negotiations.
- The City expects to exceed the capacity of our current transfer station within 10 years. A new facility is expected to cost over \$8 million. There have been preliminary discussions with Orange County of the possibility of opening a joint transfer station.

Education - The Solid Waste Management Department provides training for new City employees on the importance, expectations, and policies of reduce, reuse, and recycle in the workplace. For the general public, we have brochures, utility inserts, and public service announcements (PSAs).

Both the Solid Waste Association of North America (SWANA) and the Curbside Value Partners (CVP) recommend that cities spend about \$1.00 per household per year promoting existing recycling program and more on new programs. Unfortunately, due to budget constraints, the City spends less than 7% of this industry recommendation.

Special Waste – The City's objective is to provide safe disposal of special wastes in a way that protects the employees from waste disposal systems, prevents contaminated groundwater from entering sanitary landfills, prevents damage in sewer systems, water/wastewater treatment plants, and prevents pollution of storm water.

The City operates a facility for residential household hazardous waste (HHW) and electronic waste (e-waste), including computer equipment and televisions to ensure safe disposal of waste products that are generated in a household that are corrosive, reactive, toxic, or ignitable. The HHW facility is located at 1900 East Club Boulevard, on the south side of the North Durham Water Reclamation facility.

In addition, the City accepts tires, white goods, motor oil and antifreeze, and cooking oil for recycling and reuse at the Transfer Station.

The City does not currently accept pharmaceutical waste but will explore the possibility in the future.

C&D waste generated within the City and County may be brought for disposal at the Waste Disposal and Recycling Center, but it will be treated as regular municipal solid waste and landfilled. There are several C&D disposal facilities in Wake and Orange Counties to which C&D from Durham can also be taken.

Illegal Disposal/Litter - A Code Enforcement Officer was hired to enforce solid waste ordinances and rules. The Department plans to hire two additional code enforcement officers in 2009. These additional officers will be hired by reclassifying existing staff and no additional personnel costs are expected from this change.

Several groups work in conjunction to ensure prompt cleanup of illegally dumped items and graffiti. This includes the Department of Solid Waste Management, the Department of Neighborhood Improvement Services (including the Impact Teams), Summer Youth Clean-up crews, and Code Enforcement Nuisance Abatement Team (CENAT).

Purchasing Recycled Products - In 2009 the City Manager's Office issued Policy #SUS100, entitled the Environmentally Preferred Purchasing Policy. It states:

"All City departments shall take every reasonable effort to reduce the amount and toxicity of solid waste they generate, recycle materials recoverable from their operations, and maximize the procurement of recycled, energy efficient, and non-toxic products. Department directors shall monitor compliance with the policy."

Disaster Response – The City and the County have a joint Emergency Operations Plan that addresses debris removal and disposal during an emergency or disaster. The Department of Public Works manages a pre-event disaster debris contract that will be activated when there is a FEMA reimbursable storm event. For smaller events, the Department of Solid Waste Management will take the lead in cleanup activities.

Abatement of Abandoned Mobile Homes – Based on new state legislation, the City will work with its planning partners to evaluate the issue of abandoned mobile homes and develop a plan for abatement using the new state guidelines and statutory requirements. This is not currently identified as a significant problem in our community.

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1.0 Introduction

1.1 Background

Prior to the development of the initial State required plan, the City of Durham developed a Preliminary Solid Waste Management Plan in 1993. In preparation for that plan, the Solid Waste Subcommittee of the Environmental Affairs Board (EAB) met with staff and representatives from local businesses, industries, and institutions to share and discuss viewpoints on the solid waste issues discussed in the plan. This input along with a series of meetings with Solid Waste Management staff and discussions with our solid waste contractors contributed to the development of the plan. The first state mandated plan was submitted in 1997.

Many citizen groups have played a role in the history of solid waste management in this community. There have been several solid waste citizens' committees, including a solid waste task force, waste-based economic development committee, citizen's advisory committee on locating a new landfill, regional solid waste management committee with local representatives, and other means of involving the public in solid waste management decisions. The Department also receives feedback from the Keep Durham Beautiful (KDB) Board of Directors, the five Partner's Against Crime (PAC) citizen groups, the Inter-Neighborhood Council, and Durham CAN (Churches, Associations, and Neighborhoods).

In 2003 the Department of Solid Waste Management, with assistance from the Water Management and Public Works Departments, updated the plan. Although that may seem like an unusual collaboration, at the time, when the first plan was created in 1997, the Water Department (formerly the Environmental Resources Department) was responsible for recycling, landfills, and transfer station operations. The 2006 and 2009 updates were primarily the responsibility of the Solid Waste Department. Responsibilities that had been previously handled by other departments have since transitioned to the Solid Waste Department.

1.2 Geographical Area

This solid waste management plan covers the City of Durham. The US Census Bureau estimated population for 2008 was 223,284 based on population projections. Durham County prepares a separate solid waste plan for the unincorporated portion of the County which has a population of about 40,048. There is some overlap between the plans since it is not always possible to distinguish if waste originates in the City or the County limits. In additions, since the City operates the disposal facilities, the City must also plan for all of Durham County's waste.

1.3 Planning Area Goals

By implementing the key actions listed in the 2009 Update and by continuing to pursue a regional approach to solid waste management, the City and County can help the North Carolina move closer to its statewide waste reduction goal of 40%, and make a significant contribution to the new state goal of 2

million tons recycled annually by 2012. Our commitment to waste reduction is summarized in the following goals:

- *Goal 1* – Develop a Solid Waste Management Plan that is in conformance with state requirements, that supports local objectives and that addresses new state solid waste legislative mandates.
 - ✓ This goal ties into the Durham City Council goal of providing citizens with a healthy environment.
- *Goal 2* – Identify any deficiencies in existing solid waste management programs and systems that must be addressed in order to meet local needs and provide protection for the public health and for the environment.
 - ✓ This goal ties into the Durham City Council goal of providing citizens an efficient and accountable government.
- *Goal 3* – Develop local reduction goals and programs for the City of Durham.
 - ✓ This goal ties into the Durham City Council goal of providing citizens with a city that is rich in aesthetic beauty.
- *Goal 4* – Develop and implement a comprehensive, ongoing public education program and encourage public participation in the long-range planning process.
 - ✓ This goal ties into all of the Durham City Council goals mentioned above.

2.0 Waste Stream Evaluation

2.1 Introduction

The purpose of this Section is to present the quantities, characteristics, and projections of municipal solid waste streams that will require management by the City of Durham during the ten-year planning period.

The term “municipal solid waste” or “MSW” is used to describe the wastes that come from a variety of sources, including residential, commercial, and industrial. There are no firm definitions of what type of waste specifically falls into each category. For the purpose of this document, the City uses the following:

Residential waste is primarily collected by City of Durham staff from curbside locations. This includes waste from residential households and small businesses that receive curbside cart collection service. It also includes wastes from the County drop-off sites. It does not include wastes from apartment complexes, townhomes, or other multi-family complexes that receive their waste collection from dumpsters.

Commercial waste includes MSW from multi-family complexes, restaurants, and large commercial locations.

Industrial waste includes MSW primarily from schools and hospitals.

When talking about waste categories in Durham, there is a fourth category that is used by the state:

Construction & Demolition (C&D): This waste is used to describe any waste resulting solely from construction, remodeling, repair, or demolition operations on pavement, buildings, or other structures.

The City combines MSW and C&D; they both are disposed of in the same landfill. Therefore, the City does not have any separate C&D figures to report from the waste that is managed directly by the City. Even though we don't track it separately, NCDENR estimates that C&D constitutes 29% of the overall waste stream in NC. This figure is expected to be higher in urban areas with greater construction activity, such as Durham.

2.2 Current Waste Stream Characteristics

The City of Durham collects only a small portion of the overall waste stream, consisting of mostly single family homes within the City limits. There is a much greater volume of waste generated within the City limits that is managed by the private sector. Disposal facilities track waste by the county of origin. With the exception of waste collected by City staff, it's not possible to differentiate between waste that originated within the Durham City limits versus waste that originated within the Durham County limits. Approximately, 60% of the waste that originates in Durham is processed at the City transfer station. For comparison purposes, different waste figures for fiscal year 2007-2008 are listed below:

Table 2-1 FY 2007 – 2008 Tonnage Comparisons of Waste Origins	
Tons collected by City staff from curbside collections	48,932
Tons collected from the Durham County drop-offs	9,294
Tons managed at the City Transfer Station taken to a Virginia landfill	182,106
Total tons landfilled anywhere that originated in Durham County	307,725

2.2.1 Waste Stream Analysis

For the purposes of this plan, the total waste stream in Durham has been divided into three sectors based on types of waste generators; namely, the residential, commercial, and industrial sectors. The wastes generated by these three sectors constitute municipal solid waste (MSW). The next chart presents the percentages of waste estimated to be generated by the three identified sectors that are brought to the City transfer Station. This waste stream estimate is not reflective of the entire waste stream in Durham.

At this time, no formal waste characterization studies have been performed to determine the composition or makeup of the waste stream generated by each sector in the City. However, the

estimates, reflected in the chart below, have been compiled by analyzing weight tickets of users of the City transfer station. Depending on staff availability, we will conduct a formal waste stream analysis within three years.

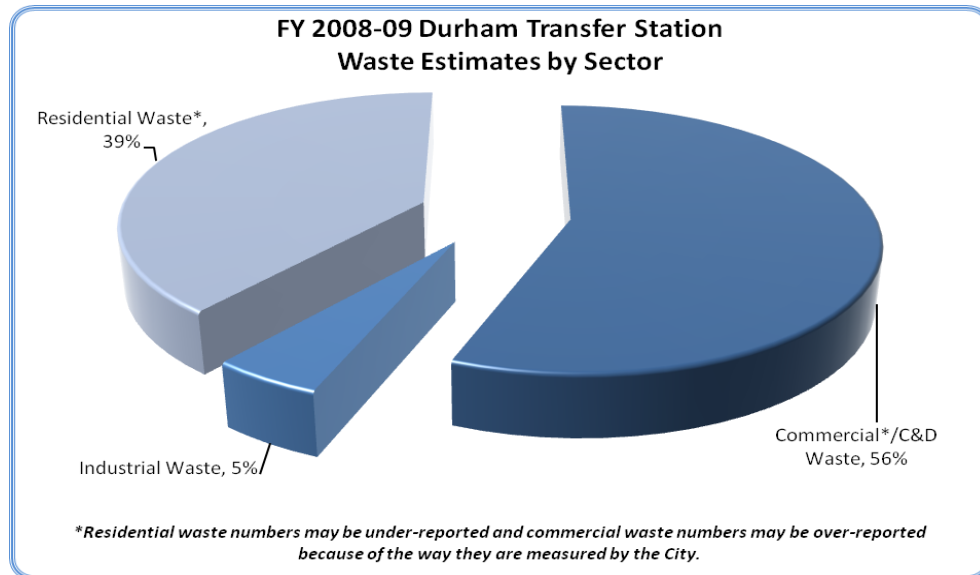


Figure 2.1

2.2.2 Waste Stream

The chart below presents the statewide estimates from NCDENR.

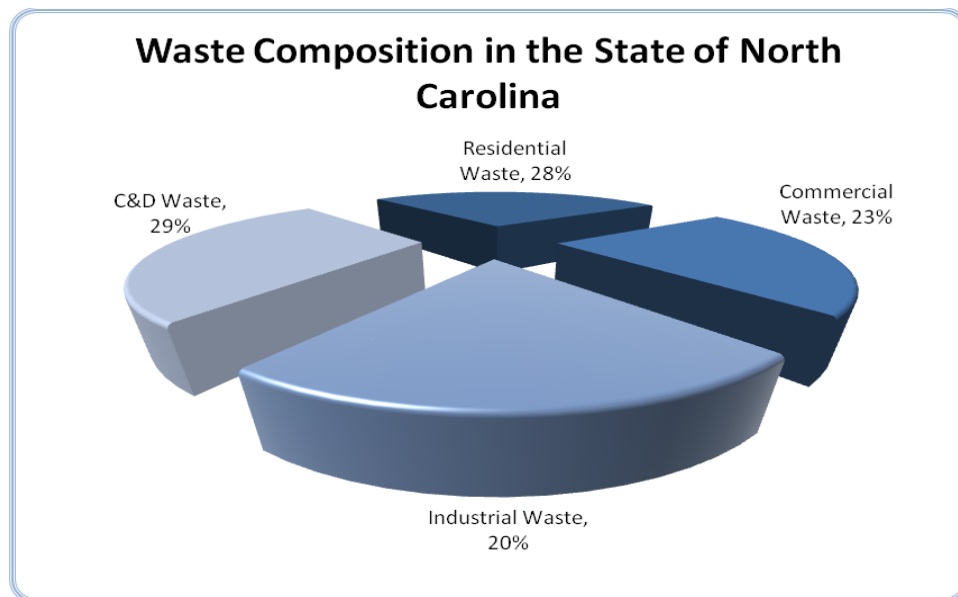


Figure 2.2

2.3 Waste Stream Projections for the City of Durham

Since the City has not conducted its own waste analysis, we are using the estimates from NCDENR on statewide composition to create the following estimates. The waste estimates, which cover the planning period of July 1, 2009 through June 30, 2019, are presented below.

It has been assumed that the per capita solid waste generation rate, documented during FY 2007-2008 will remain constant throughout the ten-year period covered by this 2009 update. Likewise, the “sector percentage estimates,” have been assumed to be constant and have been used to estimate the quantities of MSW anticipated to be generated by the individual sectors.

Table 2-2 Durham, North Carolina FUTURE MSW TONNAGE PROJECTIONS BY SECTOR¹					
Year	Population ¹	Residential Waste	Commercial Waste/C&D Waste	Industrial Waste	Total Waste Stream
2009-10	274,516	96,849	179,863	69,178	345,890
2010-11	281,541	99,328	184,466	70,948	354,742
2011-12	288,565	101,806	189,068	72,718	363,592
2012-13	295,588	104,283	193,669	74,488	372,441
2013-14	302,613	106,762	198,272	76,258	381,292
2014-15	309,636	109,240	202,874	78,028	390,141
2015-16	316,660	111,718	207,476	79,798	398,992
2016-17	323,684	114,196	212,078	81,568	407,842
2017-18	330,708	116,674	216,680	83,338	416,692
2018-19	337,732	119,152	221,282	85,108	425,542
¹ Population Estimates/Projections taken from The Office of State Budget and Management: Population Estimates and Projections (www.osbm.state.nc.us).					

3.0 Waste Reduction Goals

3.1 Overview

Our waste reduction goal as required by this plan does not refer to the amount of recycling that residents are placing in their blue carts. Waste reduction is not the same thing as recycling. This distinction has led to some confusion for both staff and the public when reporting our progress on recycling activities. To alleviate some of the confusion, this plan will provide definitions for these separate recycling measurements.

3.2 Residential Recycling Diversion

Though they may use different terminology, when speaking about how much the City recycles, most people are referring to a *recycling diversion rate*. This means the percent of recycling that is collected as compared to the amount of garbage which is collected. The calculation for this figure is as follows:

$$\text{Recycling Diversion} = \frac{\text{Recycling Tons} *}{\text{Garbage Tons} + \text{Recycling Tons}}$$

Figure 3.1

As stated before, the City does not control the entire waste stream in Durham. However, we do provide recycling for most of the residential sector (excluding multi-family complexes) and our recycling diversion is quite good in that area; about 20%. Although the diversion rate percentage for last year is slightly lower than in previous years, when adjusted for population, the per person annual disposal rate is actually slightly lower than previous years.

Table 3-1 City of Durham, North Carolina Curbside Recycling Diversion						
Fiscal Year	Recycling Tons	MSW Tons	Total Waste	Recycling Diversion	Population¹	Per Capita Disposal
08-09	12,297	49,310	61,607	19.96%	225,093	0.27
07-08	11,541	48,932	60,473	19.08%	222,672	0.27
06-07	11,501	46,596	58,096	19.80%	215,287	0.27
05-06	12,783	45,910	58,693	21.78%	210,553	0.28
04-05	13,916	43,364	57,280	24.29%	206,893	0.28
03-04	12,079	46,377	58,456	20.66%	204,890	0.29
02-03	12,620	46,235	58,855	21.44%	201,455	0.29
Average	12,391	46,675	59,066	21.00%		
¹ Population Estimates/Projections taken from The Office of State Budget and Management: Population Estimates and Projections (www.osbm.state.nc.us).						

3.3 Waste Reduction Goal: Countywide

The State mandated waste reduction goal requires a specific methodology that allows consistent benchmarking from year-to-year and from county-to-county. Although all local governments are required to track their residential recycling activities, there is no mechanism that tracks all the potential recycling and other waste reduction activities, such as scrap metal recovery, used cardboard collection, industry reuse of their own scraps, and so on. Therefore, on a county level, a different tracking mechanism other than dividing recycling by total waste is required.

Instead of looking at a “diversion figure,” as we do in the residential program, in a countywide analysis we look at the “disposal rate.” This figure is the total amount of waste landfilled that originated in

Durham, adjusted for population. It includes all waste that is landfilled, including waste that is shipped out of county, and even out of state. This disposal rate is then compared to the disposal rate in a base year to determine if we are disposing more or less.

$$\text{Waste Reduction} = \frac{\text{Base Year Per Capita Disposal} - \text{Current Per Capita Disposal}}{\text{Base Year Per Capita Disposal}}$$

Figure 3.2

When the State first required the development of a solid waste plan, the base year for measuring waste reduction was FY 1991-1992. However, communities that had recycling, yard waste, or other waste reduction programs in place, prior to FY 1991-1992 could request an earlier base year. Since the City began a recycling program in 1988 we requested and received permission to use FY 1988-1989 as the base year. Our base disposal rate is 1.31.

Table 3-2 Durham County, North Carolina TOTAL WASTE DISPOSED in the entire county Base Year FY 1988-89 Disposal Rate 1.31 Tons/Person/Year							
Fiscal Year	Total County Tonnage	MSW Tonnage	C&D Tonnage	County Population	Base Per Capita Disposal Rate	Tons Change from Base Yr	% Change From Base Yr
99-00	267,300	221,595	2,014	203,221	1.32	0.01	-0.41%
00-01*	238,314	219,282	5,125	223,314	1.02	-0.29*	21.84%
01-02	260,680	210,810	16,104	228,086	1.14	-0.17	12.76%
02-03	298,420	217,436	53,179	233,548	1.28	-0.03	2.46%
03-04	295,594	239,334	44,358	236,088	1.25	-0.06	4.42%
04-05	308,097	272,273	35,030	238,865	1.29	-0.02	1.54%
05-06	292,729	264,075	33,531	242,210	1.21	-0.10	7.74%
06-07	310,443	288,261	37,473	246,824	1.26	-0.05	3.99%
07-08	307,725	292,043	41,970	254,740	1.21	-0.10	7.79%
<i>This table presents historical quantities of waste that originates in Durham County, beginning with FY 1988-89 as the base year. This summary includes the MSW and C&D tonnages landfilled.</i>							
<i>All figures, including population estimates, are taken from the DURHAM COUNTY WASTE DISPOSAL Reports Durham County (http://www.wastenotnc.org) that are created by NCDENR based on annual reports that all solid waste facilities are required to file with the state.</i>							

The steep drop in tonnage for fiscal year 2000-2001 is attributed to a drop in reported tonnage at the Waste Management of Raleigh Durham Transfer Station. Their tonnage on the state report in FY 1999-2000 was 43,690 and 14,487 in FY 2000-2001. It is the belief of the Solid Waste Department that this data represents a transcribing error. Unfortunately, NCDENR was unable to find the original report filed by Waste Management to verify the number. In previous updates to the plan, the City had only examined the total tonnage report. This is the first time that we actually analyzed the tonnage report by facility for each year, thus this possible discrepancy had never been identified before.

3.4 Waste Reduction Goals: Past and Future

The State of North Carolina established a waste reduction goal for the entire state. In its FY 2007 – 2008 NCDENR reported that its goal of 40% waste reduction would not be achieved. Few local governments have been able to establish source reduction programs and expand recycling programs that are sufficient to meet this goal. In the fall of 2008, the State announced a new goal of recycling 2 million tons per year by 2012. Our waste reduction goals are below.

Table 3-3 Durham, North Carolina WASTE REDUCTION GOALS		
Versions of the Ten-Year Plan	Fiscal Year: Short-Term Reduction Goal	Fiscal Year: Long-Term Reduction Goal
1997 Original Plan	FY 2000 – 2001: 25%	FY 2005 – 2006: 40%
2000 Plan Update	FY 2003 – 2004: 13%	FY 2009 – 2010: 18%
2003 Plan Update	FY 2006 – 2007: 13%	FY 2012 – 2013: 21%
2006 Plan Update	FY 2009 – 2010: 15%	FY 2015 – 2016: 27%
NEW GOAL 2009 Plan Update	FY 2012 – 2013: 10%	FY 2018 – 2019: 15%

3.5 Meeting the Waste Reduction Goals

This 2009 Plan Update is designed to reduce the City's waste by 38,129 tons in FY 2012 – 2013 and 61,973 tons in FY 2018 - 2019. If the new waste reduction goals in Table 3-3 are applied to each waste sector equally, then Table 3-4 shows the targeted reductions.

Table 3-4 Durham, North Carolina Approximate Waste Reduction by Sector for FY 2013 – 2014 & FY 2018 - 2019		
Waste Type	Targeted Tons to Reduce in FY 2013 – 2014: 10%	Targeted Tons to Reduce in FY 2018 – 2019: 15%
Residential (28 %)	10, 676	16,014
Commercial/C&D (52%)	19,827	33,192
Industrial (20%)	7,626	12,766
Total	38,129	61,973

3.5.1 Reduction Methods

Reduction methods include source reduction, recycling, reuse, composting, and special waste programs. *Source reduction* is any action that avoids creating waste by reducing volume or toxicity of waste at the source, including redesigning products or packaging to increase durability or reusability of materials or otherwise preventing material from entering the waste stream. *Recycling* is recovering materials from the waste stream that can be converted into raw materials to manufacture into new products. *Reuse* is further or repeated use. *Composting* is a method of biologically decomposing organic matter in an environment conducive to growing microorganisms under aerobic conditions. *Special waste* programs include household hazardous waste disposal programs, tire recycling, recycling used motor oil/antifreeze, etc.

3.5.1.1 Residential Waste

This plan targets reduction of 10,676 tons in FY 2012-13 and 16,014 tons in FY 2018-19 for reduction in residential sector waste. The Disposal Ban Ordinance has made an impact on recycling participation in the residential sector and is expected to continue to encourage waste reduction. Increased recycling tonnage is anticipated to be the primary contributor to meeting this sector's waste reduction goal. Also, reuse of items is stressed in many ways. The City has a Swap Shop at the Waste Disposal and Recycling Center to keep as much material out of the landfill as possible. These are explained further in the *Recycling and Reuse* section of this document.

Since December 2006, yard waste has been comingled with the solid waste that is collected and disposed of at the Transfer Station. As of April 2009, the City received NCDENR permit approval to construct a new yard waste facility. The facility is expected to open in January 2010.

3.5.1.2 Commercial Waste

The goal for reducing commercial waste is approximately 19,827 tons in FY 2012-13 and 33,192 tons in FY 2018-19. The Disposal Ban Ordinance has increased interest in recycling programs for the commercial sector. However, enforcement is very difficult under the current language. An ordinance revision may be necessary to increase commercial waste reduction.

3.5.1.3 Industrial Waste

The industrial waste reduction goal is 7,626 tons in FY 2012-13 and 12,766 tons in FY 2018-19. The Disposal Ban Ordinance has a minimal impact on industrial wastes. Most waste generated in the industrial or manufacturing sector is not targeted by the ordinance.

4.0 The Planning Process and Public Participation

The Solid Waste Management Department hosted a public meeting for citizen input on Wednesday, July 29, 2009 at noon and on Tuesday, August 4 at 6:00 pm in the auditorium at the Operations Facility. The City also participated in the County's public meeting on August 29th at the East Regional Library.

The meeting was announced in a news release prepared by the City's Public Affairs office and was featured on the City's website. The spring 2009 Solid Waste newsletter included information on the meetings and was inserted in the water utility bill for all Durham County customers. Meeting information was also advertised in Indy Week, the Herald Sun, and MyNC.com.

Durham City Council reviewed the updated Plan at its October 22, 2009 work session. The public hearing was conducted during the regular City Council meeting on November 2, 2009. City Council adopted a resolution approving the updated Plan.

5.0 Assessment of Programs and Services

5.1 Introduction

Each solid waste management method is described below as required by North Carolina General Statute 130A-309.09A (b). Each section includes a description of the current program and identifies potential changes.

5.2 Reduction

State offices, state supported colleges, and county schools are required by legislation and executive order to practice waste reduction whenever possible and to have recycling programs in place for aluminum, office paper, and corrugated cardboard. City solid waste management planning partners have been working with representatives from the County schools to promote and expand these reduction and recycling programs, and will continue to provide encouragement and support whenever possible.

5.3 Collection

The City of Durham's department of Solid Waste Management provides the following collection services to the community:

5.3.1 Curbside Waste Collection

The City provides curbside household garbage collection service directly to Durham's 67,000 single-family homes and some small businesses once a week. Semi and fully automated vehicles are used to collect from 96-gallon capacity carts. Fully automated collection was introduced to some areas of the City in 2001. Fully automated vehicles collect 75% of the City's residential trash. Fully automated collection is a technologically advanced system that employs a specially fitted trash vehicle. Trash from

carts is mechanically dumped into the truck from a curbside location. The operator uses a set of controls inside the truck cab to operate a mechanical arm that lifts, dumps, and then returns the container to the curb.

Backyard (exempt) service is provided to residents who are physically unable to move a cart to the curb. Exempt residents may have their trash collected from a designated area by City rollout cart collection crews. In July 2005 the City eliminated the automatic age-based exemption.

The following targeted recyclable items - glass bottles and jars, aluminum and steel cans, newspaper and corrugated cardboard - are banned from disposal by City Ordinance. Informative stickers with information about the ban used to be included on all trash carts before they are distributed to citizens. This practice was stopped due to budgetary concerns.

5.3.2 Yard Waste Collection

Yard waste includes vegetative debris, e.g., leaves, grass and shrub clippings, garden residue, twigs, branches, and limbs from around the yard. They should be no more than 4 feet in length; no single limb may be more than three inches in diameter, and no bundles more than 18 inches in diameter. Anything larger should be set out as bulky brush items.

Residents desiring this service must rent a brown 96-gallon yard waste cart from the City for \$1.50 each month and pay an annual yard waste fee of \$60. Prior to 2008, carts were sold instead of being leased. Residents who bought their cart when they were available are not required to pay the lease rate. The \$60 annual fee was approved by City Council in June of 2004. Only residents with brown yard waste carts and a current sticker receive this service. Yard waste is set out the same day as garbage but is collected the next day. The garbage collection crews use data capture devices to alert the yard waste crews where to pick it up the day after garbage. Once the brown cart is full, residents may use up to ten 30-gallon biodegradable paper bags for overflow. Plastic bags are not accepted. There are approximately 17,000 paid yard waste customers.

5.3.3 Bulky Item Collection

Bulky item collection includes large items, such as household appliances (white goods) and old furniture that do not fit in the garbage cart. This service is not intended for yard waste. A resident can place a maximum of three bulky items on the curb the same day as normal household collection for garbage and recycling. When the regular crews come through to pick up the green and blue roll-out carts, they will note the bulky items on the curb with data capture device that will be used to create a work order list for the next day. A bulky items crew member will come back the next day to pick it up. There was no fee for this service as of July 2009. Fees will apply if residents exceed the 3-item limit.

5.3.4 Bulk Brush Collection

Paid yard waste subscribers are entitled to two free collections of bulky brush. Overflow brush may be placed in tied bundles that are no more than 4 feet in length and 18 inches in diameter. No individual piece may be larger than 3 inches in diameter. Bundles should be placed next to the

brown yard waste carts away from mailboxes, landscaping, sprinkler heads, pavement stones and other items that may be damaged during collection. These items are collected curbside at no additional cost.

Non-yard waste customers may arrange the service for a fee. Also, subscribing customers who have additional bulky brush collections, beyond the two free pick-ups, are available for a fee.

5.3.5 Curbside Recycling

Prior to July 2009, the City provided, through a private contractor, Tidewater Fibre Corporation (TFC), weekly commingled curbside recycling for 65,000 households and seven drop-off centers located throughout the City. July 2009 brought about some major changes to recycling collection in the City of Durham. Six of the seven drop-off centers were closed, leaving one city-run center open. Also, the City changed the curbside recycling program from 18-gallon weekly collection to 95-gallon bi-weekly collection. See section 5.4 for more information on the City's recycling program.

5.3.6 Stationary Container Collection

As of June 30, 2009 the City ceased providing stationary container services (dumpsters). Customers were primarily businesses and multi-family residential complexes.

5.4 Recycling and Reuse

5.4.1 Recycling

Curbside Collection

July 13, 2009 ushered in a significant change in Durham's curbside recycling program. After reviewing the results of a very successful bi-weekly curbside recycling pilot program that was conducted from October 2008 to July 2009, a decision was made to quickly roll it out to the entire city on that date. The pilot issued 95-gallon roll-out carts to a group of residents and picked up the recycling every other week. There was an increase in participation in that pilot group from 40% to 70%. There was also a 50% increase in the amount of material collected. Tidewater Fibre is no longer contracted for curbside recycling pickup. That is now handled by employees of the Solid Waste Management Department.

New Construction

The Department of Solid Waste Management has a representative on the Development Review Board (DRB) and all site plans for building within the City must be approved by the department. Developers must show that the building(s) will meet the needs for trash disposal and for the recycling of target recyclables (those items banned from landfill disposal in Durham) in order to be approved.

Drop-Offs

On July 11, 2009 the six unstaffed, 24-hour city-run drop-off centers were closed. The Waste Disposal and Recycling Center (Transfer Station) at 2115 E. Club Boulevard remains open to accept recycling drop-offs. Durham County also operates 4 drop-off centers, one of which is in the city limits. This has unfortunately led to a service gap for multi-family complex dwellers that frequently used them. The Department is investigating alternatives to the drop-off centers.

There were several factors that led to closing the un-staffed centers:

- Because they were unstaffed only a minimal amount of usable recyclables were recovered from these locations, mainly due to contamination of what was left there.
- Rampant illegal dumping had become a major problem.
- Considerable staff time was used in keeping the sites clean.
- With the introduction of curbside recycling collection service, the need for so many drop-off centers was lessened

Special Wastes

The Waste Disposal and Recycling Center also accepts used cooking oil, motor oil, antifreeze, and whole scrap tires, white goods (appliances) for scrap metal, pallets, and lead-acid batteries for recycling. Fees will apply if bringing in five or more tires at one time.

Internal Office Recycling

The City also provides a recycling program for City offices. Bins and carts are located throughout Durham at City offices. An employee of the Department of Solid Waste Management collects the recyclables each week and takes them to a local recycler for processing. All the items accepted in our curbside program can be recycled in City offices. Staff can mail back ink and laser cartridges to the manufacturer for recycling. Different departments also have in place recycling programs to address their specific needs. For example, the Fleet Department has a recycling program in place for used oil and oil filters.

Special Events Recycling

The City provides recycling for numerous special events that are held in Durham including the Bimbé Festival, CenterFest, Durham Blues Festival, and Earth Day celebrations.

Disposal Ban

Since January of 1998, the City has had an ordinance in place that bans the disposal of certain recyclable items. The target recyclables currently banned from disposal include newspaper, glass jars and bottles, aluminum and steel cans, and corrugated cardboard.

There have been new general statutes banning the disposal of certain recyclables in the state's landfills and incinerators since the last update. The NC General Statute § 130A-309.10 preamble states:

Prohibited acts relating to packaging; coded labeling of plastic containers required; disposal of certain solid wastes in landfills or by incineration prohibited. The specific banned items are as follows:

5.4.1.1.1 - Effective January 01, 2007: Oyster Shells

Oyster shells were banned from disposal by NC General Statute 130A-309.10(f). They also cannot be used in landscaping or on roadsides. Durham does not produce the large number of oyster shells as compared to more coastal areas so it is not a major issue. Some local seafood restaurants do participate in a private shell recycling program.

Oyster shells that are delivered to a landfill (and presumably a transfer station or recycling center as well) can be stored for at least 90 days or until they are removed for recycling. If they are not removed for recycling within 90 days of delivery, then notwithstanding subdivision (12) of subsection (f) of the statute, the oyster shells may be disposed of in a North Carolina landfill. Because the City of Durham currently transports its waste to a Virginia landfill, we do not have an issue with how to dispose of oyster shells. The Department has also verified that even though the Commonwealth of Virginia does have an active oyster shell recycling program, it does not have a legal ban on landfilling oyster shells.

5.4.1.1.2 – Effective October 01, 2009: Motor Oil Filters, Recyclable Rigid Plastic Bottles, Wooden Pallets

The City already has a recycling program in place to recycle motor oil filters at the HHW Facility at 1900 E. Club Boulevard. The Transfer Station will also start accepting oil filters by the end of 2009.

Plastic bottles are accepted in the City's curbside program.

Plans are to apply for a permit modification so that pallets can be ground up at the yard waste facility. In the meantime, they will continue to be transported to the landfill in Virginia. A pilot program for a pallet exchange, run in 2005, was not very successful due to inconsistent demand for pallets.

5.4.1.1.3 – Effective January 01, 2011: Computer Equipment and Television

In anticipation of the ban on e-waste the City already had a recycling program in place at the HHW Facility. Large electronic items can currently be picked up curbside as part of the bulky item collection service, but they are not recycled. In light of the impending ban however, the City is researching other pickup solutions.

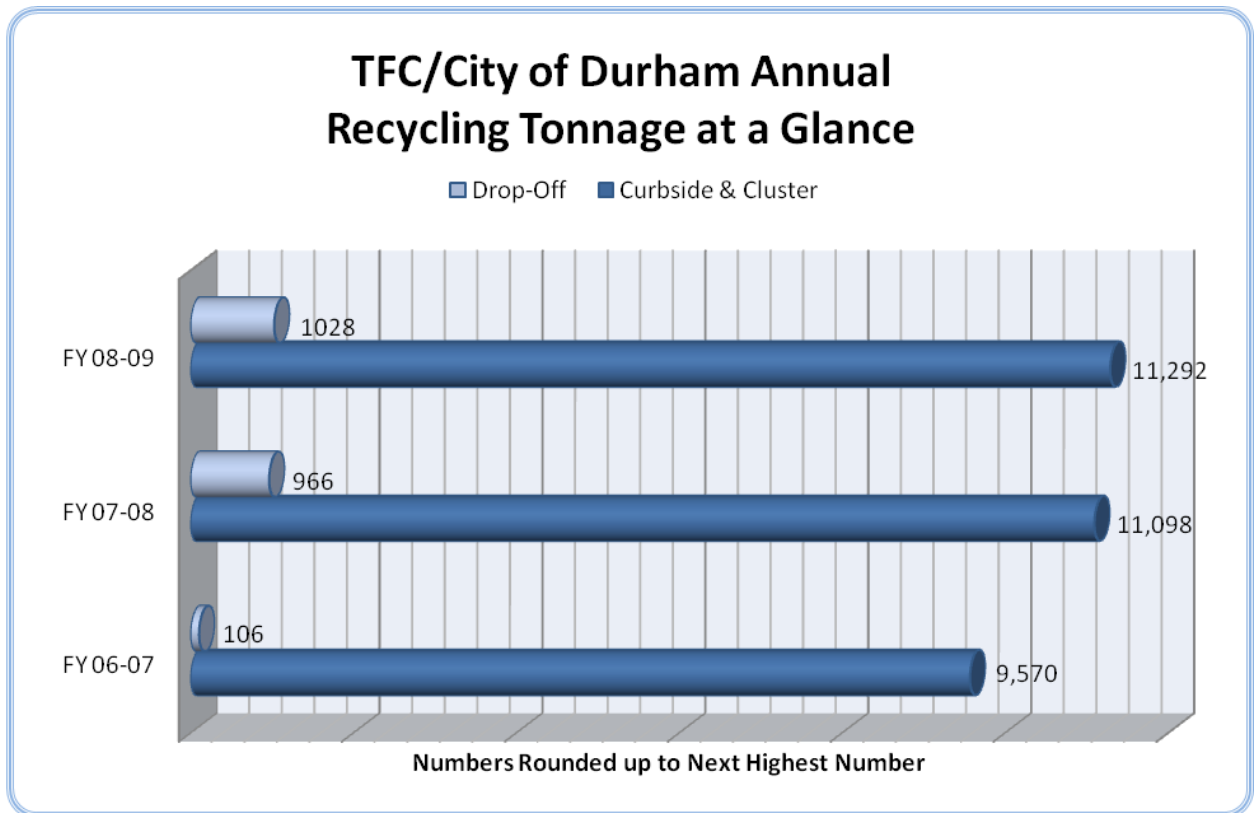


Figure 5.1

5.4.2 Reuse

The City's website encourages residents to take advantage of reuse and donation programs and organizations. Many charities, shelters, and non-profit organizations accept donations of used, surplus or obsolete but reusable materials.

The City operates a Swap Shop at the nearby City Transfer Station (2115 East Club Blvd). This encourages waste reduction through the practice of reuse. Residents having items in good working, useable condition can donate them to the Swap Shop directly. Also, staff at the HHW Facility will examine items brought there and transport any reusable items to the Swap Shop. Residents in need of items can visit the Swap Shop to look for items. Whatever items are available can be taken for free. Visitors to the Swap Shop recognize and accept all risk and responsibility for items taken. Guidelines for Using the Swap Shop are:

- ✓ The Swap Shop is open to residents only (no businesses please).
- ✓ All visitors must check in with the scale operator onsite.
- ✓ Items must work.
- ✓ Items should be placed neatly on the shelves.
- ✓ Like items should be placed together.
- ✓ Furniture must not be soiled, torn or broken in any way.
- ✓ The Swap Shop operates on a first-come, first-serve basis.

- ✓ You don't have to bring something to take something.
- ✓ All items are free.

5.5 Composting and Mulching

In June 2006, the City received a notice of violation (NOV) from NCDENR for operating the yard waste facility without a permit, which had expired July 7, 2004. However, the facility continued to operate without a permit, while the City renegotiated the conditions that would allow the facility to be re-permitted. On September 10, 2006, a fire occurred at the City's YWCF. On September 12, 2006, NCDENR issued a "Notice of intent to issue a compliance order with administrative penalty for failure to renew the permit." This compliance order required us to close the yard waste facility immediately.

As a result, all yard waste that is collected is disposed of at the Transfer Station with all other solid waste and ultimately shipped to a landfill located in Lawrenceville, Virginia. On April 1, 2009, the City received approval from NCDWM to reopen and operate its yard waste facility. It is anticipated to reopen by January 2010. In the coming months, the City will solicit bids for a composting and mulching contractor to operate the facility prior to scheduling its reopening.

In prior years, the City used to sell compost bins to the public at a wholesale cost but ceased doing so for budgetary reasons. Although we were able to recover the money through the sale of compost bins, we still had to find the initial resources to purchase the entire truckload of compost bins. We may explore reinstating this program in the future. Information on backyard composting is made available on the City's web site and at public events.

5.6 Incineration Element

Incineration is not part of the City's current program. The City has no plans to use incineration with or without energy recovery at this time. However, nationwide there are several new energy conversion technologies being piloted. The City will follow the research in this evolving industry and may revisit this topic in the future.

5.7 Transfer Outside Geographical Area

The City owns a transfer station, located at 2115 East Club Boulevard. The transfer station has two bays that are served by a pre-compaction unit and two bays that use open top loading. a tipping floor and compactor facility. A contractor (Operator) working for the City provides primary and backup equipment, and operates the facility. The Operator also provides transfer vehicles, transports the waste, and provides the maintenance of the transfer vehicles and all operation equipment connected with the transfer station. Solid waste is transported to this facility by public and private collectors. We are permitted to accept waste that originates in six counties; Durham, Orange, Person, Wake, Granville, and Chatham. However, we typically only receive waste from Durham and Orange Counties. The operating contract for the transfer station expires April 2010.

The City will continue to transfer solid waste received at the Transfer Station outside of the geographic area since there is no Subtitle D sanitary landfill within Durham. Currently, waste is transported to the,

Brunswick Waste Management Facility in Lawrenceville, Virginia. This facility is 90 miles from the transfer station and is owned by Republic-Allied Waste, Inc.

Although the city transports its waste to another state, the Brunswick Landfill is geographically closer to Durham than other North Carolina landfills. Using a North Carolina landfill would help keep jobs in the state, but disposal costs may increase due to the longer hauling distances. The current contract ends in June 2010. This topic will be explored again as a new contract is negotiated

5.8 Disposal

There is no MSW landfill in Durham County operated by either a public or private entity. We are not aware of any plans to construct an MSW landfill in Durham. Please refer to the appendix for a list of permitted solid waste facilities in Durham.

LCID waste generated in Durham, in the past, would have been taken to the City LCID Landfill (Permit #32B), located at 1833 Camden Avenue. The site, however, was closed to businesses and local governments on January 31, 2006. The City has contracted with an engineering firm to complete the closure process. A closure plan submitted to NCDENR was approved. Half of the landfill was capped in November of 2008. We project the second half will be capped by December 2009.

Construction and demolition (C&D) waste generated within the City and County may be brought for disposal to the Waste Disposal and Recycling Center at 2115 East Club Boulevard, providing that it is no longer than eight (8) feet and will not cause an operational problem with the transfer station pre-load compactor, however, it will be taken to an MSW landfill. There are also several other area C&D disposal facilities to which C&D waste can be taken.

5.9 Education

The Solid Waste Management Waste Reduction Coordinator makes presentations at local schools and whenever possible, provides training for teachers, encouraging them to make waste reduction and recycling a part of their extra-curricular activities. The City works with private, public, and charter schools teaching children early on, how to reduce, reuse, and recycle. There is no standard City wide recycling curriculum in the schools. Schools are managed by the County and not the City; therefore, there have been some limitations on increasing recycling education within the county-run public school system, due to a lack of interest. The Solid Waste Reduction Coordinator will be collaborating with Keep Durham Beautiful to develop some joint educational projects.

Another duty of the Waste Reduction Coordinator is to provide training for new City employees. A portion of the NET (New Employee Training) is dedicated to training them on the importance, expectations, and policies of reduce, reuse, and recycle in the workplace.

One other way the City educates its citizens about Solid Waste issues is by sometimes inserting newsletters in the water bills. This is a very effective to insure nearly everyone who receives curbside pickup receives information from the Department concerning new developments or helpful tips on waste reduction.

5.10 Special Waste

The City's objective is to provide safe disposal of special wastes in a way that protects the employees and residents from waste disposal systems, prevent contaminated groundwater from entering sanitary landfills, prevent damage in sewer systems and water/wastewater treatment plants, and prevent pollution of storm water.

The City operates a facility for residential household hazardous waste (HHW) and electronic waste (e-waste), including computer equipment and televisions to ensure safe disposal of waste products that are generated in a household that are corrosive, reactive, toxic, or ignitable. The HHW facility is located at 1900 East Club Boulevard, on the south side of the North Durham Water Reclamation facility. It is approximately 1,500 feet from the City of Durham Waste Disposal and Recycling Center (Transfer Station). The City will explore the cost and legalities of accepting business waste in the near future.

The HHW Facility's operating hours are as follows:

- Tuesday and Wednesday from 12 p.m. – 6 p.m.
- Thursday, Friday, and Saturday from 7:30 a.m. – 3 p.m.
- Closed each Sunday and Monday, and on City recognized holidays.

In addition, the City accepts tires, white goods, motor oil, antifreeze, and cooking oil at the Transfer Station. The City does not accept business waste but will explore the possibility in the future.

The City does not currently accept pharmaceutical waste but will explore the possibility in the future.

5.11 Illegal Disposal / Litter

A Code Enforcement Officer was hired to enforce solid waste ordinances, rules, and fees. It is the Department's plan to hire two additional officers to enhance enforcement efforts.

The Department of Solid Waste Management works in concert with the Department of Neighborhood Improvement to ensure faster cleanup of illegally dumped items, illegal set-outs, litter, spilled garbage, quick paint-out and/or removal of graffiti, and clean sidewalks and street gutters. That department coordinates the efforts of Impact Teams, Summer Youth Clean-up crews, and Code Enforcement Nuisance Abatement Team (CENAT).

Since the last update, street cleaning was turned over to the Public Works Department in mid 2008.

Table 5-1
City of Durham, North Carolina
DEPARTMENT OF SOLID WASTE MANAGEMENT LITTER INDEX
FY'S 2005-2006 THROUGH 2007-2008*

	FY 2005 -2006	FY 2006 – 2007	FY 2007 - 2008
Cubic Yard Swept	15,197	10,790	14,794
Sweeping Tonnage	4,000	3,383	3,017
Litter Tonnage	412	389	423
<i>*Note: All figures rounded up to nearest whole number.</i>			

5.12 Purchasing Recycled Products

In 2009 the City Manager's Office issued Policy #SUS100, entitled the Environmentally Preferred Purchasing Policy. It states:

"All City departments shall take every reasonable effort to reduce the amount and toxicity of solid waste they generate, recycle materials recoverable from their operations, and maximize the procurement of recycled, energy efficient, and non-toxic products. Department directors shall monitor compliance with the policy."

The figure below shows a sample of items purchased by the City that contains at least 10% recycled content. It does not represent all items that were purchased with recycled content but it represents the bulk of recycled items purchased products by the various City government divisions. Although the City's current purchasing database is very limited in its search abilities, the new ERP system, which is in the process of being installed, will greatly enhance the City's capacity to track recycled content purchases in the future.



5.13 Disaster Response

The manner in which the City responds to a “disaster”, particularly a severe weather related event, is based on the severity of that event and whether or not a declaration of emergency has been made. In the event that there is a severe weather related event and no declaration of an emergency is made, the Department of Solid Waste Management, the Department of Public Works, and the Department of General Services will coordinate efforts and share the mission for street clearing, collection, removal, and disposal of storm debris within the City limits. The Department of Public Works has oversight, and

responsibility for directing, coordinating, and managing this storm debris removal effort until all work is complete. Refuse collection and transfer station operations must be prepared and able to go to extended “workday” hours of operations, if necessary, with appropriate reporting structures in place.

Upon declaration of an emergency, the Department of Public Works will be responsible for contracting, directing, coordinating, and managing the storm debris collection, removal, and disposal effort, until all work is done. The Department of Public Works also has responsibility for the development and annual update of the Debris Management Plan and for maintenance of Pre-Event Contracts for storm debris removal and Pre-Event Contracts for contract monitoring. All operational departments with the appropriate equipment will be required to assist with storm debris removal in order to expedite a “return to normal environment” as quickly as possible, which the citizen’s expect and deserve. This coordinated effort by City employees, in conjunction with the Storm Debris Contractor and the Storm Debris Contract Monitor, will be coordinated by the Department of Public Works.

As of August 2009, three (TDSRS) Temporary Debris Storage & Reduction Sites have been approved by the state historic preservation organization (SHPO) and the Natural Heritage Preservation organization (NHP). Any site that has been approved by DENR can be used to store storm debris. However, only sites that have been approved by both SHPO and NHP qualify to receive FEMA funds. The approved sites are:

- the old burrow site (behind the closed MSW landfill)
- Solite Park
- Rock Quarry Park

The Department does not believe these three sites have sufficient capacity in case Durham is directly hit by a category 4 hurricane. We are in the process of trying to identify additional sites. Some areas under current consideration are listed below, but none of these have been yet formally submitted for a review by DENR, SHPO, or NHP.

- Glenn Road/Animal Control: Beside Animal Control and Transfer Station
- “Former” Nello Teer Rock Quarry
- South Durham Waste Water Treatment Plant Property

The availability of any of these sites is contingent on any current use and any other changes that may have occurred between the time of selection, time of approval, and the time of disaster. The use of any of these sites as TDSRS must be approved, in advance, by the NCDENR before they can be used.

Disaster Response Contacts:

- Jeff Batten, Durham City/County Emergency Management Director, (919) 560-0660
- Donald Long, Director of Solid Waste Management, City of Durham, (919) 560-4186
- Kathryn Kalb, Director of Public Works, City of Durham, (919) 560-4326
- Rick Prather, General Manager, Republic/Allied Waste Systems, LLC, (919) 991-1000

- Matt Gierden, Regional Manager, AshBritt Environmental, Inc. 954-545-3535

5.14 Abatement of Abandoned Mobile Homes

Based on new state legislation, the City will work with its municipal planning partners to evaluate the issue of abandoned mobile homes and develop a plan for abatement using the new state guidelines and statutory requirements.

Following proper disposal procedures, the metal base, wheels, axles, window frames, and aluminum siding should be removed and separated from the other materials. White goods, household hazardous waste, and municipal waste should be separated and recycled or properly disposed of. Any bulky items of debris slated for disposal should be broken down into pieces eight feet or smaller so that it will not cause an operational problem with the transfer station pre-load compactor.

6.0 Solid Waste Costs and Financing Methods

6.1 Introduction

The purpose of this Section is to provide information on the costs associated with the collection, processing, and disposal of waste managed by the City of Durham's Department of Solid Waste Management. As prescribed by North Carolina General Statutes 130A-309.09A (b)(7) a description and assessment of the full cost of solid waste management, including the costs of collection, disposal, waste reduction, and other programs and methods of financing are presented.

6.2 Description of Program Costs

The City of Durham provides programs for collection, disposal, recycling and street cleaning. A summary of the solid waste program costs and funding sources is in the appendix. Some program highlights are:

- A recycling contract of \$1,983,364
- Other waste reduction costs of \$159,752
- A Household Hazardous Waste contract of \$227,943
- Tipping fees for garbage collected by City crews \$1,975,345
- Tipping fees for yard waste collected by City crews \$253,109

6.3 Financing Methods

The current solid waste program is funded through a combination of property taxes, tipping fees, yard waste fees, state white goods tax, state tire tax, bulky item fees, storm water fund, and until June 2009 service fees for stationary container service.

The scrap tire program is mostly paid for through the tire tax levied by the state. The tire tax funds are sometimes not sufficient to cover all our expenses. In the past, we have applied to the state for grants to cover the cost over runs. Since the tire fund balance on a state level is much lower than in years past, this may not be an option in the future.

The white goods tax distribution supports the white goods program. In addition white goods are sold for scrap metal, and those funds are further used to fund the program. However, state law forbids the use of any white goods tax money to fund a collection program. White goods tax money must be exclusively used to fund only the disposal of appliances. Even funding the collection of white goods is a prohibited use of the white goods tax money.

6.3.1 Assessment of Financing Methods

As new services and facilities are added to the City's program, creative sources of revenue and improved efficiencies will be necessary to maintain the current service levels.

6.3.1.1 Tipping Fees:

As of April 6, 2009 the tipping fee for the sanitary landfill changed to \$42 per ton, up from \$39.50 per ton. Tipping fees generated during FY2008-2009 were \$6,546,672, which is a reduction from the previous year of \$7,446,896. This reduction was expected because the transfer station was operating at reduced capacity due to the floor renovations.

Since we operate a transfer station, most of the collected tipping fees are used to pay the landfill that ultimately disposes of our waste. From that \$42.00, we only keep about \$4.75, after paying the following fees:

- \$2.00 in a state wide solid waste tax.
- \$30.27 to cover hauling and disposal costs
- \$4.45 - \$5.00 in operating costs

6.3.1.2 Stationary Container Fee:

This program was discontinued in July 9, 2009. Prior to that, the monthly fees were:

- Month-to-month rate for once a week collection was \$85.00 per month, per stationary container
- Customers contracting for a one-year term received a 5% discounted rate of \$80.75 per month, per stationary container
- Customers contracting for a one or two-year term had a rate of \$61.50 per month with a recycling contract and \$76.50 without a recycling contract.
- Special requests for additional services to subscribed dumpsters were \$20.50 per collection.

6.3.1.3 Dead Animal Fee:

Dead animal fees are charged for the collection and disposal of animal carcasses. The current fee for regular weekly collection is \$50.00 per month. Special collection is provided for a \$10 per carcass fee. This function is handled by the Public Works Department.

6.3.1.4 Bulky Item Fee:

All non-brush bulky items are picked-up free of charge with a limit of three times per pickup per week. Fees apply for excess items.

6.3.1.5 Bulky Brush Fee:

Current yard waste recycling customers are entitled to receive two free bulky brush pick-ups not to exceed 8 cubic yards total per year. Fees will be charged based on volume for excess collection.

6.3.2 Financing Options

We currently have an optional flat fee for yard waste collection. We do not have a fee for solid waste collection or recycling. However, with our increase in program costs, a monthly fee for garbage collection may be considered in the future.

We have made several investments in technology measures that would allow us to improve our collection efficiencies. But this does not eliminate the rising costs of our programs. Without a fee, we are mostly dependent on the general fund, which relies on property taxes to fund our programs.